

### **ABSTRACT OF THE DISCLOSURE**

The developmental potential of a mammalian oocyte for successful implantation is evaluated by producing a plurality of intensity images of the oocyte using polarized light optics, and calculating a retardance image with a sensitivity of 3nm or less. The presence, location and morphological characteristics of a meiotic spindle in the oocyte can then be determined based on the spindle structure in the retardance image, and the developmental potential of the oocyte can be evaluated.